

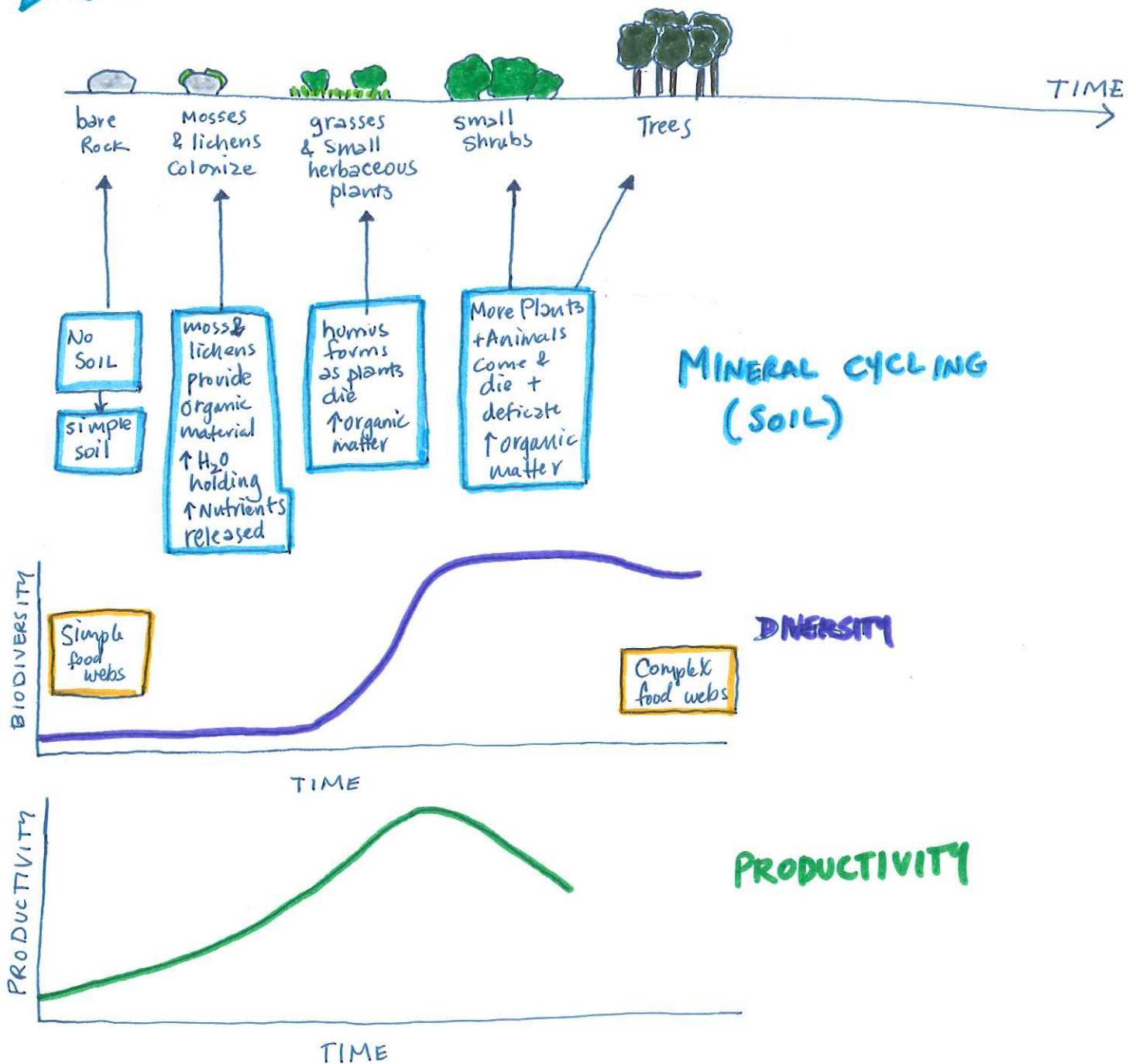
Succession Notes

2.6.5 Describe the concept and processes of succession in a named habitat

Primary Succession → Colonization of newly created land by organisms.

Succession is Always change over time

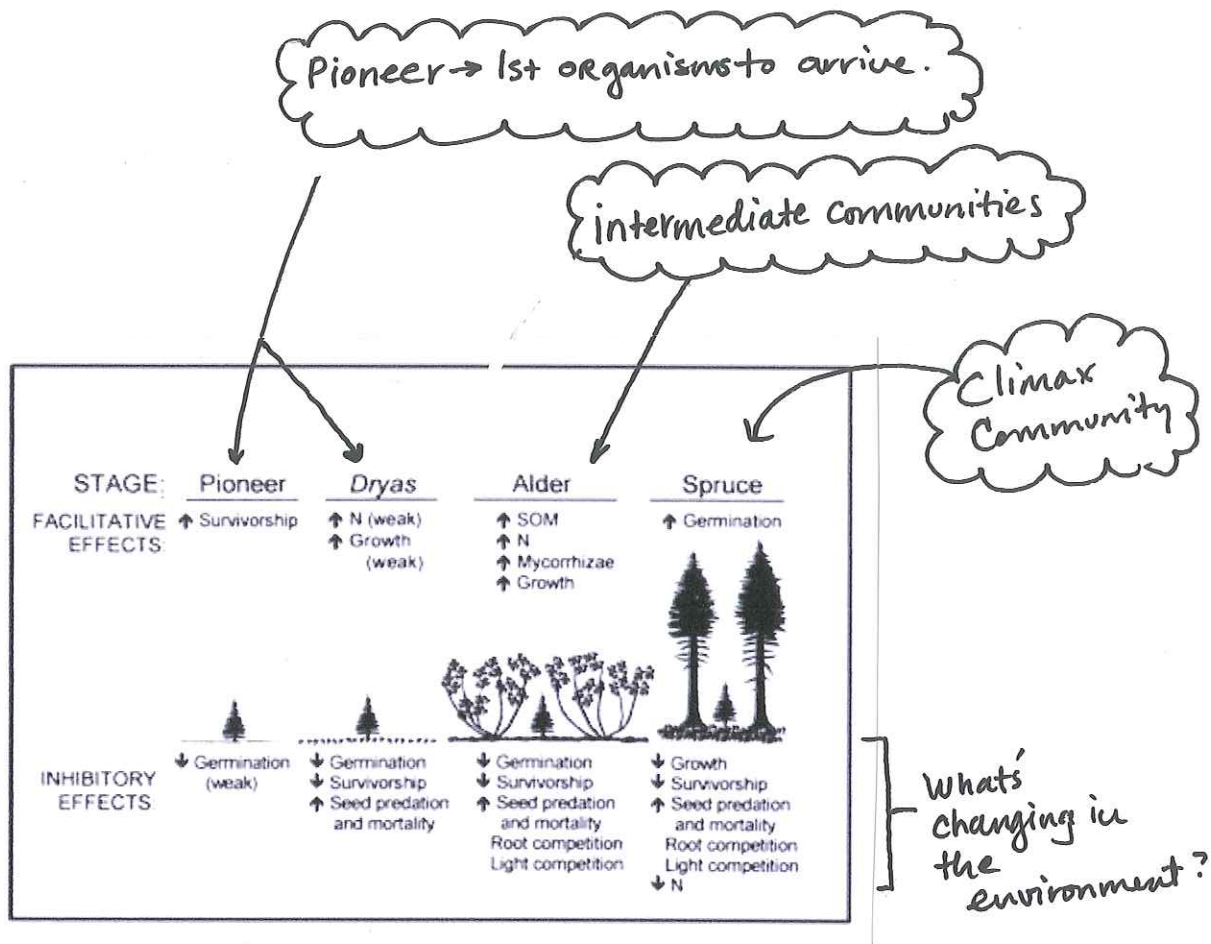
NEW LAND! → River deltas, volcanic lava fields, sand dunes, glacial deposits, or new islands



EXAMPLE OF PRIMARY SUCCESSION,

GLACIER BAY, ALASKA

* GLACIER IN THE AREA RETREATING → NEW SUBSTRATE



Pioneers

Mosses +
Dryas



Willow
Scrub



Alder
Forest



Climax

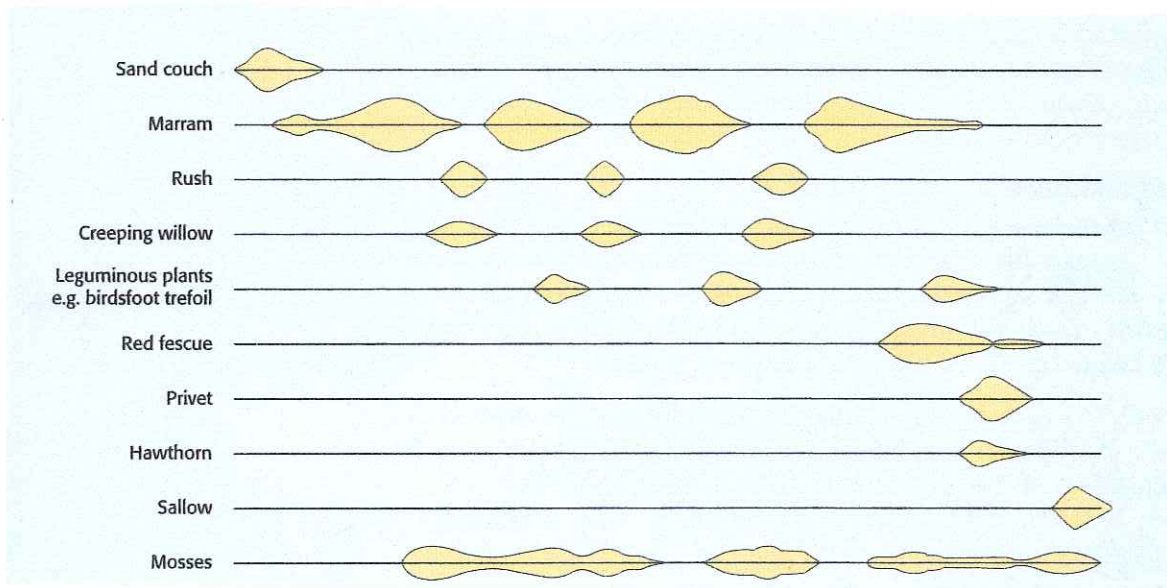
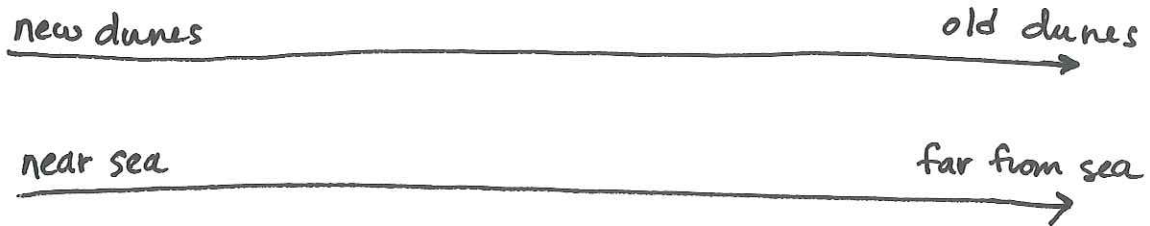
Sitka Spruce
Mixed Forest

Takes ~1,500 yrs.
to reach.

EXAMPLE 2 OF PRIMARY SUCCESSION

BRAUNTON BURROWS, ENGLAND

* Sand dunes develop over long periods of time →
Can see succession in action as you walk to
older dunes.

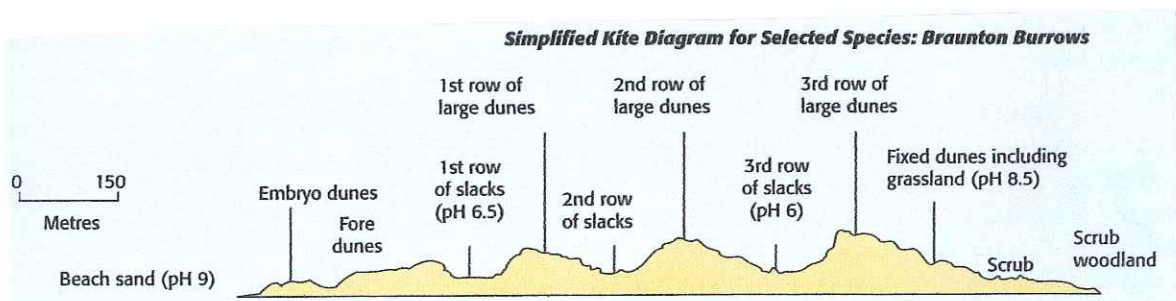


↑
Pioneer
Species

↑
Climax
Species

↑
diagram
called a
"kite
diagram"

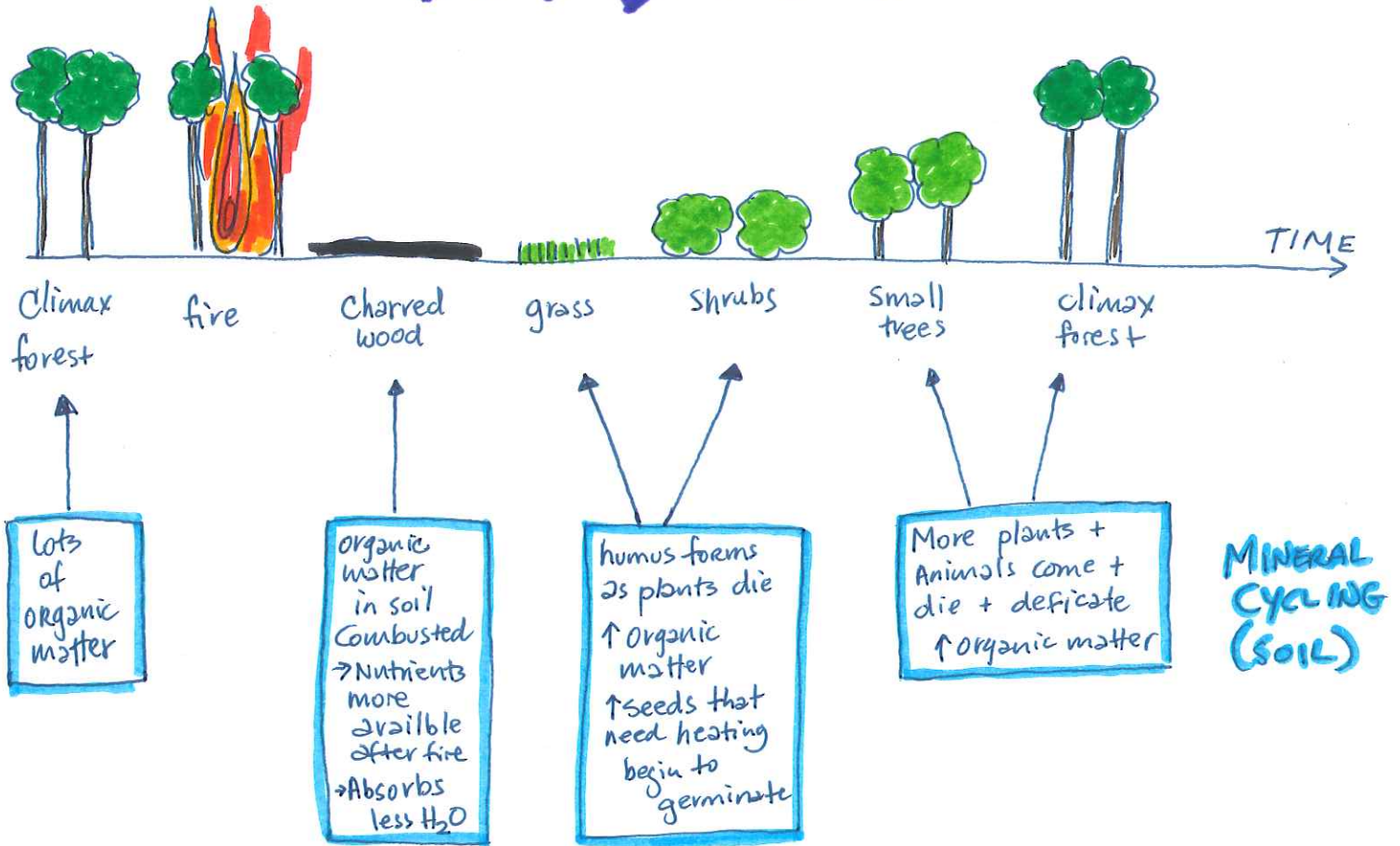
These organisms
change their
environments



Secondary Succession

→ Colonization on soils that already exist.
Soils always already exist; often seeds already in the soils.

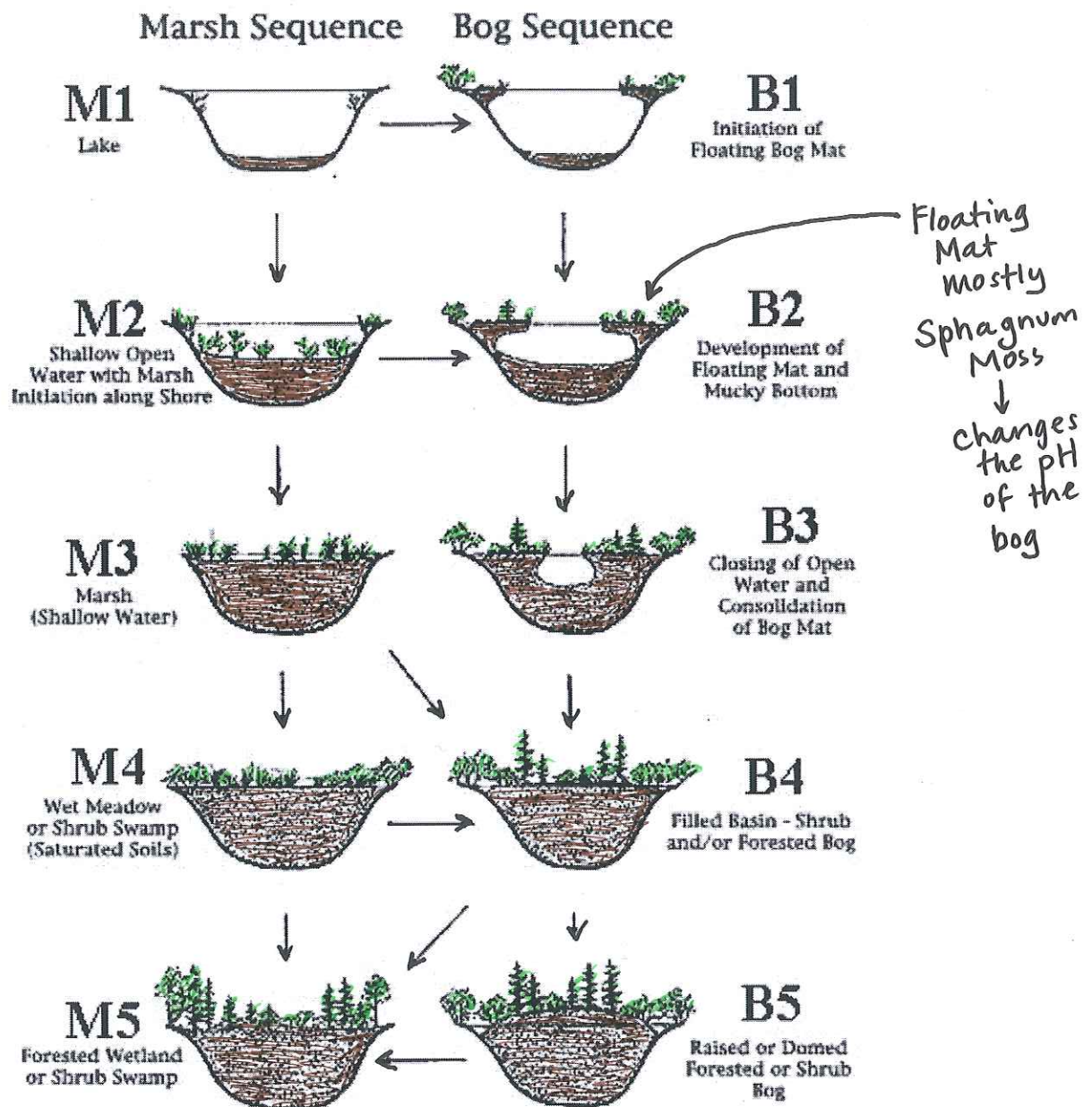
↓ Quickens secondary succession



* BIODIVERSITY + PRODUCTIVITY → SAME AS 1^o SUCCESSION.

EXAMPLE OF SECONDARY SUCCESSION → MARSH & BOG FORMATION

* A FORMER LAKE TRANSITIONS TO DRY LAND



* You don't need to know the diff. btw. Marshes + Bogs

SUCCESSION

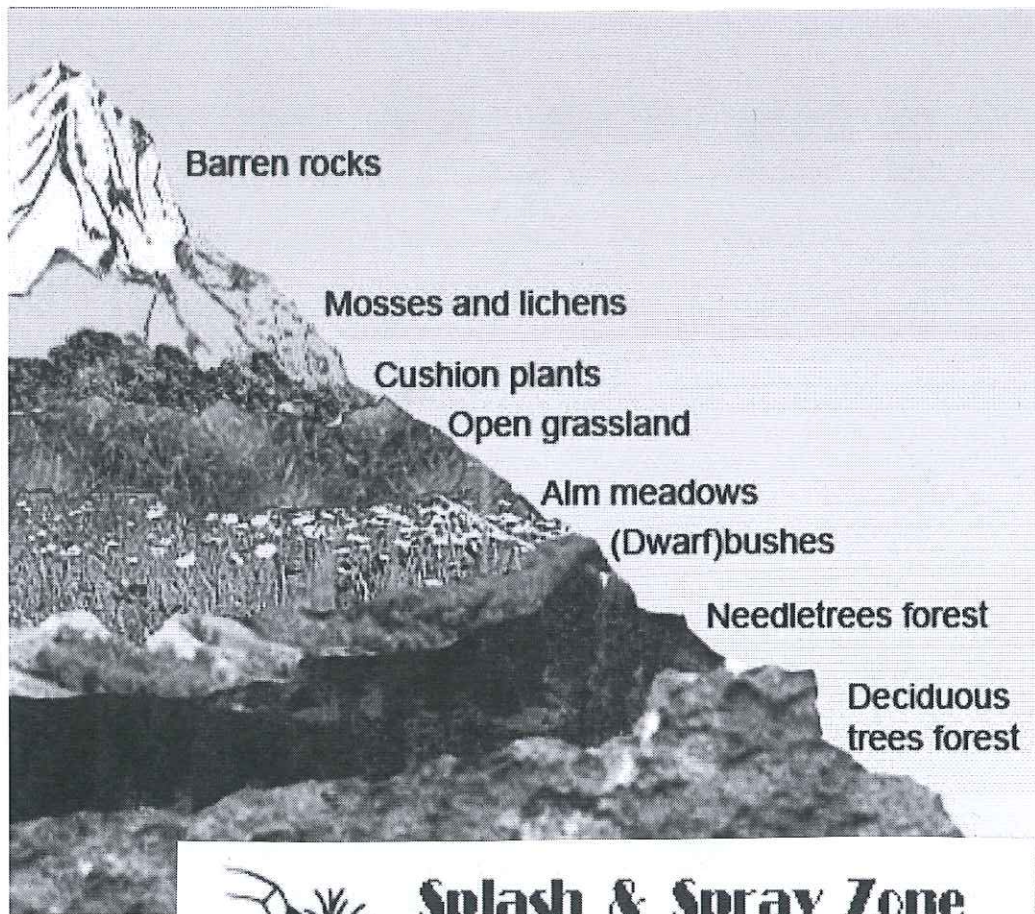
vs.

Zonation

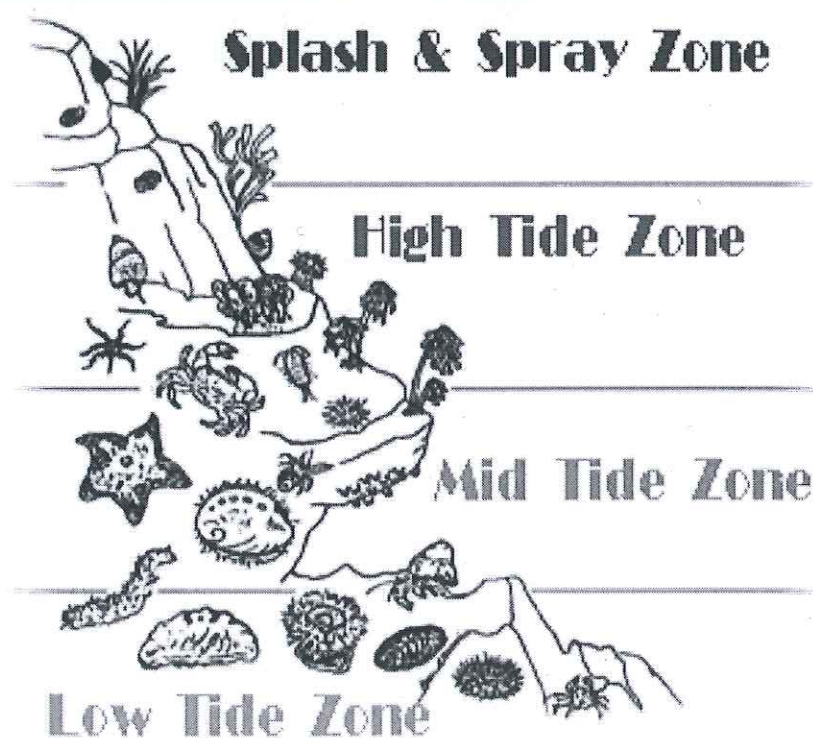
↑
change
over
time



Change over
Space/distance

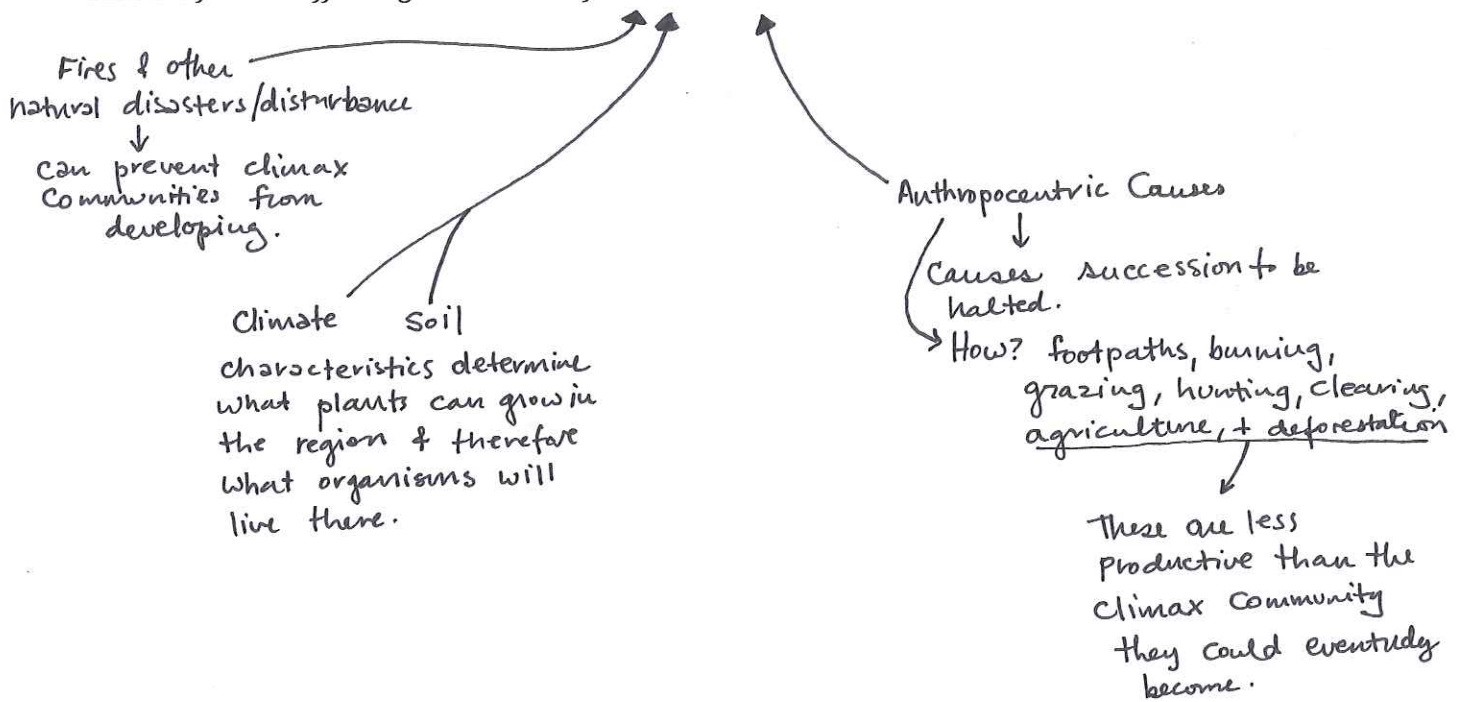


ZONATION
ON
MOUNTAINS

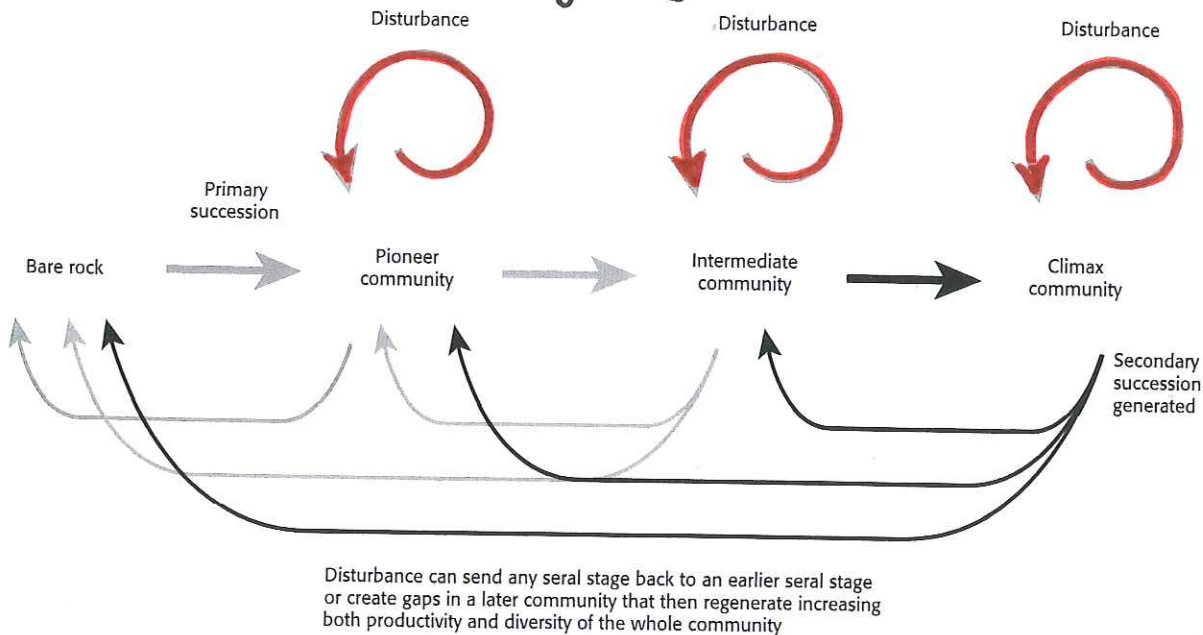


ZONATION IN
TIDAL ZONES

2.6.7 Describe factors affecting the nature of climax communities



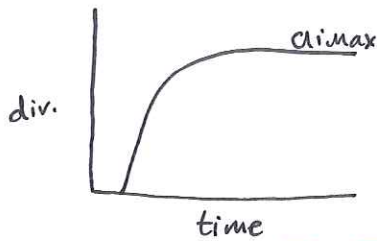
↓ Basically disturbance means the process keeps taking steps backwards rather than getting to the climax



2.6.6 Explain the changes in energy flow, gross and net productivity, diversity and mineral cycling in different stages of succession.

* Each stage improves the conditions for the next stage.

* DIVERSITY



* Spp. change the habitat as they live in it.
(eg. Rocks brk. down bc. of lichens)

* Later spp. outcompete earlier spp.

* Production: Respiration Ratio (P/R)

↳ Production = Rate of Respiration

↳ $P/R > 1$ then biomass accumulates.

↳ $P/R < 1$ then biomass is depleted.

When $P/R = 1$ Steady-state equilibrium ensues.

occurs in climax communities

less stable

More stable

Pioneer Community	Intermediate Community	Climax Community
Small organisms Low Biomass	Medium organisms	Large organisms High Biomass
Simple food chains/webs	> Complex food chains/webs	> Complex food chains/webs
No → a little top soil	Some top soil	Lots of top soil
Soil can't hold H_2O		> water holding by soil
Soil has few minerals & nutrients		> Soil has lots of minerals & nutrients
very little nutrient cycling		> nutrient cycling
Few niches → low biodiversity r-selected favored	diverse & habitat niches ↳ ↑ Biodiversity	Stable habitats so fewer niches ↓ biodiversity K-selected favored
Few Producers so ↓ GPP Low Respiration ↑ NPP	> Producers ↑ GPP > Respiration ↑ NPP	↑ GPP ↑ Respiration ↑ NPP STABILIZES!

Photosynthesis > respiration

Photosynthesis > respiration

Photosynthesis = Respiration

SECONDARY SUCCESSION EXAMPLE → FOREST COMES BACK FROM FIRE

